

**U.S. Department of the Interior
Bureau of Land Management
White River Field Office
220 E Market St
Meeker, CO 81641**

DETERMINATION OF NEPA ADEQUACY (DNA)

NUMBER: DOI-BLM-CO-110-2011-0150-DNA

CASEFILE/PROJECT NUMBER: COC-69165

PROJECT NAME: Chevron Research, Development and Demonstration (RD&D) Hydraulic and Tracer Study

LEGAL DESCRIPTION: T.3 S., R. 97 W., 6th PM
Sec. 5, Lot 6

APPLICANT: Chevron U. S. A.

BACKGROUND/INTRODUCTION: In January 2007, Chevron USA received the Oil Shale Research, Development and Demonstration (RD&D) Lease COC69165. Lease issuance and terms are based on Environmental Analysis [CO-110-2006-120-EA](#). Terms of the lease require the operator to submit a detailed Plan of Development (POD) for approval. In 2007 BLM approved Chevron's prospecting operations that included drilling 15 geo-hydro wells located on 3 well pads and core holes on fourth pad. In 2008 BLM approved a modification to Chevron's prospecting operations to include four tracer wells on the core pad and construct a lay down pad.

DESCRIPTION OF PROPOSED ACTION: Chevron proposes to conduct hydraulic and tracer study in the A groove aquifer interval of the Core Hole #1. Testing consists of injecting a non-reactive, low detection limit, innocuous compound into the targeted hydrologic zone. Tracers may be fluorinated benzoic acids (FBAs), halides, or light alcohols.

The objective of the proposed hydraulic and tracer studies is to obtain field-scale estimates of the hydrologic and solute transport properties of the A-Groove aquifer to be used in larger scale groundwater flow and solute transport models to support the development of Chevron's in-situ oil shale extraction process and assist in designing environmental monitoring and remediation systems for the protection of groundwater resources.

The study consists of a series of five tracer injection and production tests utilizing five existing wells on a single pad. It is designed to obtain information related to the hydraulic and transport properties in the A-groove.

The tracer test period would run for about six weeks and would recover approximately 40,000 barrels of A-Groove formation water that Chevron is proposing to dispose by infiltration to the unconfined Uinta aquifer. An approximately 200 ft x 200 ft x up to 5 ft deep infiltration pit

would be constructed for this purpose (see map). Disturbance for the infiltration pit is approximately 1.8 acres making the total disturbance due to RD&D activities on COC69165 approximately 11 acres. It is estimated the water will infiltrate over a period of five to seven days. Chevron would like to start the study in August 2011.

Chevron is also proposing installing micro purge U-tube samplers in five water quality wells and commencing sampling late summer.

Design Features: Stormwater and erosion control Best Management Practices (BMPs) would be installed at the site to prevent erosion and sediment transport and may include straw waddles, diversions, armored catch basins, or other BMPs deemed appropriate to prevent erosion and manage stormwater runoff. All reclamation activities would be conducted immediately following the completion of the tracer testing. Equipment would be removed from the site and the infiltration pit would be backfilled, compacted to prevent subsidence, and graded to approximate pre-construction natural contours. Topsoil would then be spread back over the disturbance to its approximate pre-construction depth and seeded with approved the following seed mix:

Ecological Site/Range Site = Rolling Loam	(lbs PLS/acre)
Western wheatgrass (Rosanna)	2.0
Indian ricegrass (Rimrock)	1.0
Bluebunch wheatgrass (Whitmar)	2.0
Thickspike wheatgrass (Critana)	2.0
Globemallow	0.5
Fourwing saltbush (Wytana)	1.0
Total	8.5

The location would be monitored regularly for weeds and all BMPs would be inspected and maintained until such time as the site was re-disturbed for future drilling/process testing or it is deemed adequately re-vegetated and stabilized.

Decision to be Made: The BLM will decide whether to allow Chevron to conduct the hydraulic and tracer study on Oil Shale RDD Lease COC-69165 with the use of an infiltration pit and the installation of micro purge samplers in water monitoring wells, and if so, under what conditions.

PLAN CONFORMANCE REVIEW:

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: page 2-6

Decision Language: “At the discretion of the Secretary of the Interior, research scale lease tracts will be considered within lands available for oil shale leasing. Approval of research tracts will be based on the merits of the technology proposed.”

REVIEW OF EXISTING NEPA DOCUMENTS:

List by name and date all existing NEPA documents that cover the Proposed Action.

Name of Document: White River Resource Area Proposed Resource Management Plan and Final Environmental Impact Statement (PRMP/FEIS).

Date Approved: June 1996

Name of Document: CO-110-06-120-EA, Chevron U.S.A., Inc. Oil Shale Research, Development and Demonstration Pilot Project.

Date Approved: 11/09/2006

List by name and date any other documentation relevant to the Proposed Action (e.g., biological assessment, biological opinion, watershed assessment, allotment evaluation, and monitoring report).

Name of Document: U. S. Fish and Wildlife Service (USFWS) Biological Opinion ES/GJ-6-CO-94-F017

Date Approved: 09/12/2006

NEPA ADEQUACY CRITERIA:

1. Is the new Proposed Action a feature of, or essentially similar to, an alternative analyzed in the existing NEPA document? Is the project within the same analysis area, or if the project location is different, are the geographic and resource conditions sufficiently similar to those analyzed in the existing NEPA document? If there are differences, can you explain why they are not substantial?

Documentation of answer and explanation. CO-110-06-120-EA analyzed a seven phase approach in the development of the oil shale research project with a total surface disturbance of up to 100 acres within the lease boundary. In Phases 1 and 2 the development of wells for monitoring and characterization of the geologic formation and groundwater resources are identified. Groundwater characterization also includes the implementation of non-reactive aquifer tracer test.

2. Is the range of alternatives analyzed in the existing NEPA document appropriate with respect to the new Proposed Action, given current environmental concerns, interests, and resource values?

Documentation of answer and explanation CO-110-06-120-EA has a Proposed Action alternative, sub-alternative, a no action alternative, and two alternatives considered but not analyzed in detailed. No reasons were identified to analyze additional alternatives and these alternatives are considered to be adequate and valid for the Proposed Action.

3. Is the existing analysis valid in light of any new information or circumstances (such as, rangeland health standard assessment, recent endangered species listings, updated lists of BLM-sensitive species)? Can you reasonably conclude that new information and new circumstances would not substantially change the analysis of the new Proposed Action?

Documentation of answer and explanation CO-110-06-120-EA was approved 11/09/2006 and since then no new studies or resource assessments have been undertaken that change the validity of the analysis. In 2010, the US Fish and Wildlife Service (FWS) concluded that the greater sage-grouse warranted listing as an endangered species under the Endangered Species Act. This project is located outside of overall mapped range for the greater sage-grouse.

4. Are the direct, indirect, and cumulative effects that would result from implementation of the new Proposed Action similar (both quantitatively and qualitatively) to those analyzed in the existing NEPA document?

Documentation of answer and explanation: CO-110-06-120-EA analyzed the overall effects of shale oil recovery project for Chevron's Oil Shale lease tract CO-C69165 which includes disturbing up to 100 acres of surface area and identifies the need for non-reactive groundwater testing to determine geo-hydrologic site characterization. Implementation of the Proposed Action would increase the current area of disturbance from approximately 9 acres to approximately 11 acres. The indirect, direct, and cumulative impacts of the proposed project are less than what is analyzed in the EA.

5. Is the public involvement and interagency review associated with existing NEPA documents adequate for the current Proposed Action?

Documentation of answer and explanation Collaboration and public involvement for the CO-110-06-120-EA included:

- Public open houses in four communities - Rangely, Meeker, Rifle and Grand Junction;
- Endangered Species Act Section 7 consultation with the US Fish and Wildlife;
- Tribal notification;
- 30-day public review periods on the EA (August 15 through September 18, 2006);
- Monthly coordination meetings in the BLM Colorado State Office with local, state and federal agencies on the progress in the RD&D effort.

INTERDISCIPLINARY REVIEW:

The Proposed Action was presented to, and reviewed by, the White River Field Office interdisciplinary team on 7/12/2011. A complete list of resource specialists who participated in this review is available upon request from the White River Field Office. The table below lists resource specialists who provided additional remarks concerning cultural resources and special status species.

Name	Title	Resource	Date
Kristin Bowen	Archaeologist	Cultural Resources, Native American Religious Concerns	8/10/2011
Lisa Belmonte	Wildlife Biologist	Special Status Wildlife Species	8/2/2011
Zoe Miller	Ecologist	Special Status Plant Species	7/20/2011

REMARKS:

Cultural Resources: The entire 160 acre RD&D site was inventoried at the Class III (100 percent pedestrian) level in 2006 (Conner 2006). This Class III inventory identified no cultural resources in the area, so this new proposal will not affect any cultural resources potentially eligible to the National Register of Historic Places.

Native American Religious Concerns: No known concerns.

Threatened and Endangered Wildlife Species: On March 5, 2010, the US Fish and Wildlife Service (FWS) concluded that the greater sage-grouse warranted listing as an endangered species under the Endangered Species Act, but that listing was precluded by the need to complete listing actions of higher priority. Range-wide, this species is considered a candidate for listing--a designation that affords management attention equivalent to that of species considered "sensitive" by the BLM. Although located outside of overall mapped range for the greater sage-grouse, the project area is located in predominately sagebrush habitats and holds potential for future reoccupation by sage-grouse. Reclamation should promote a seed mix that contains grass and forb species that benefit sage-grouse and the seed mix should be altered by substituting Rocky Mountain Penstemon (Bandera) for Fourwing saltbush (Wytana).

Threatened and Endangered Plant Species: There are no special status plant species concerns associated with the Proposed Action.

MITIGATION:

The Proposed Action is subject to Oil Shale Research, Development and Demonstration (RD&D) Lease COC69165 Section 25 Special Stipulations and the following:

1. The applicant is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.
2. If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO

Archaeologist will be notified immediately. Work may not resume at that location until approved by the AO. The applicant will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. The applicant, under guidance of the BLM, will implement the mitigation in a timely manner. The process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.

3. Pursuant to 43 CFR 10.4(g), the applicant must notify the AO, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), the applicant must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.
4. The operator shall use the following reclamation seed mix to help benefit greater sage-grouse:

Ecological Site/Range Site = Rolling Loam	(lbs PLS/acre)
Western wheatgrass (Rosanna)	2.0
Indian ricegrass (Rimrock)	1.0
Bluebunch wheatgrass (Whitmar)	2.0
Thickspike wheatgrass (Critana)	2.0
Globemallow	0.5
Rocky Mountain Penstemon (Bandera)	1.0
Total	8.5

COMPLIANCE PLAN: “Application for Notice of Intent to Conduct Prospecting Operations for Hard Rock/Metal Mines Oil Shale Research, Development, and Demonstration”

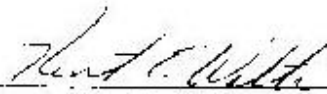
NAME OF PREPARER: Paul Daggett

NAME OF ENVIRONMENTAL COORDINATOR: Heather Sauls

CONCLUSION

Based on the review documented above, I conclude that this proposal conforms to applicable land use plan and that the NEPA documentation fully covers the Proposed Action and constitutes BLM’s compliance with the requirements of the NEPA.

SIGNATURE OF AUTHORIZED OFFICIAL:


Field Manager

DATE SIGNED:

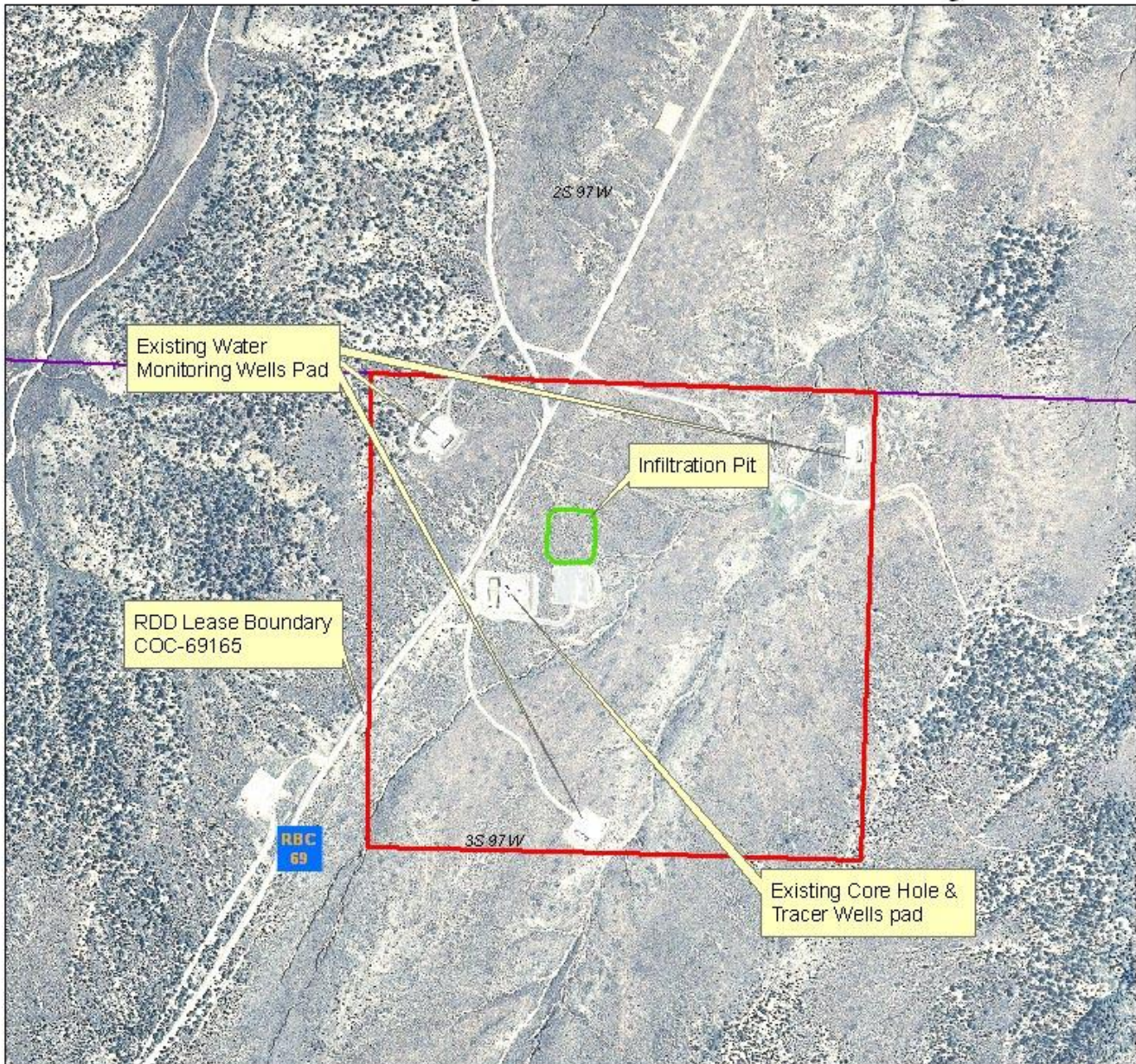
08/24/2011

ATTACHMENTS: Location Map

Note: The signed Conclusion in this DNA Worksheet is part of an interim step in the BLM's internal decision process and does not constitute an appealable decision. However, the lease, permit, or other authorization based on this DNA is subject to protest or appeal under 43 CFR Part 4 and the program-specific regulations.

DOI-BLM-CO-110-2011-0150-DNA

Chevron RDD Hydraulic and Tracer Study



07/11/2011

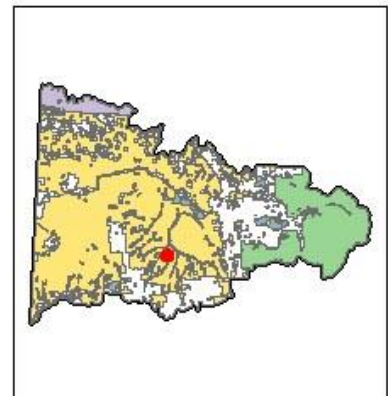
T.3 S., R. 97 W., 6th PM
Sec. 5, Lot 6



0 250 500 1,000
Feet

Sources:
BLM, USGS, CDOW, etc.

Disclaimer:
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DECISION RECORD

PROJECT NAME: Chevron Research, Development and Demonstration (RD&D) Hydraulic and Tracer Study

DETERMINATION OF NEPA ADEQUACY NUMBER: DOI-BLM-CO-2011-0150-DNA

DECISION

It is my decision to implement the Proposed Action, as mitigated in DOI-BLM-CO-2011-0150-DNA, authorizing Chevron to conduct the hydraulic and tracer study on Oil Shale RDD Lease COC-69165 with the use of an infiltration pit and to install micro-purge samplers in water monitoring wells.

Mitigation Measures

The Proposed Action is subject to Oil Shale Research, Development and Demonstration (R,D&D) Lease COC69165 Section 25 Special Stipulations and the following:

1. The applicant is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.
2. If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO Archaeologist will be notified immediately. Work may not resume at that location until approved by the AO. The applicant will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. The applicant, under guidance of the BLM, will implement the mitigation in a timely manner. The process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.
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Total	8.5

COMPLIANCE WITH LAWS & CONFORMANCE WITH THE LAND USE PLAN

This decision is in compliance with the Endangered Species Act and the National Historic Preservation Act. It is also in conformance with the 1997 White River Record of Decision/Approved Resource Management Plan.

PUBLIC INVOLVEMENT

Collaboration and public involvement for CO-110-06-120-EA included:

- Public open houses in four communities - Rangely, Meeker, Rifle and Grand Junction;
- Endangered Species Act Section 7 consultation with the US Fish and Wildlife;
- Tribal notification;
- 30-day public review periods on the EA (August 15 through September 18, 2006)
- Monthly coordination meetings in the BLM Colorado State Office with local, state and federal agencies on the progress in the RD&D effort.

The BLM informed the public about this project by listing DOI-BLM-CO-110-2011-0150-DNA on the online WRFO NEPA Register and a copy of the completed Determination of NEPA Adequacy will be posted on the WRFO website.

RATIONALE

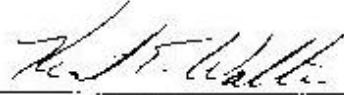
The Proposed Action with the applied mitigation conforms with the White River Record of Decision and Approved Resource Management Plan, is consistent with the analysis of “Chevron U. S.A. Inc. Oil Shale Research, Development and Demonstration Pilot Project” in Environmental Analysis CO-110-2006-120-EA and constitutes BLM’s compliance with the requirements of NEPA.

ADMINISTRATIVE REMEDIES

Any appeal of this decision must follow the procedures set forth in 43 CFR Part 4. Within 30 days of the decision, a Notice of Appeal must be filed in the office of the Authorized Officer at White River Field Office, 220 East Market St., Meeker, CO 81641 with copies sent to the Regional Solicitor, Rocky Mountain Region, 755 Parfet St., Suite 151, Lakewood, CO 80215, and to the Department of the Interior, Board of Land Appeals, 801 North Quincy St., MS300-

QC, Arlington, VA, 22203. If a statement of reasons for the appeal is not included with the notice, it must be filed with the Interior Board of Land Appeals at the above address within 30 days after the Notice of Appeal is filed with the Authorized Officer.

SIGNATURE OF AUTHORIZED OFFICIAL:



Field Manager

DATE SIGNED:

08/24/2011